Amendments to the Specification:

Please replace the paragraph beginning on page 1, line 20, with the following amended paragraph:

A typical arrangement of the electronic processing and protection circuitry coupled to a sensing element is shown in Figure 1. A thermal sensing element 101 is connected to processing circuit 110 via connection lines 112 and 113 as shown. Processing circuit 110 amplifies and processes the signal from sensing element 101 so as to produce a temperature readout signal 107. Sensing element 101 is also connected to protection circuit elements 102, 103, 104 and 105 via connection lines 112 and 113 as shown. Typically, sensing element 101 has one end connected to a ground, or earth, terminal shown here as connection 106. Sensing element 101 typically includes a number of thermopile elements in series with a combined series impedance on the order of tens of [Kohm] kΩ. The connections 112 and 113 between the two ends of the series of thermopile elements and the processing circuit are normally protected at one or even both ends against static damage and incoming EMC radiation by protection circuits 102, 103, 104, and 105, which are arranged such as to limit the voltage excursions of the connections using diode structures connected to the power supply rails. The diodes are typically configured to conduct when the voltage on the pins exceeds the power rail voltage by the diode voltage.

Please replace the paragraph beginning on page 2, line 4, with the following amended paragraph:

Such protection structures, even when not operating, have an inherent leakage current, and when the external impedance is high, e.g., on the order of tens of [Kohm] kΩ, the leakage current generates an error voltage superimposed on the desired signal voltage generated by the sensor.

Please replace the paragraph beginning on page 4, line 28, with the following amended paragraph:

The signals generated by the sensing element 301 are small in magnitude, e.g., typically between about 10 ~~microvolts/degC~~ microvolts/°C and about 100 ~~microvolts/degC~~ microvolts/°C , and more typically approximately 50 ~~microvolts/degC~~ microvolts/°C. In a conventional arrangement, the leakage currents associated with the protection circuit elements at the inputs to the processing circuitry would have leakage currents of between 1 and 10 ~~nanoAmps~~ nA. These leakage currents combined with the impedance of the thermopile elements at typically 50 ~~Kohms~~ kΩ would give unwanted error voltages between about 50 and about 500 microvolts, equivalent to an error of about 1 to about ~~10 degC~~ 10°C. In one embodiment of the present invention, the protection circuit elements 303 and 304 are advantageously connected to the reference connection 307, and not the power supply. Protection circuit elements 303 and 304 each preferably include a diode element. The magnitude of the signals from the radiation sensing element 301 is small and the diodes in this region of their operating curve have a leakage that is much smaller and substantially linear with voltage and is preferably compensated for by adjustments to the gain in the ensuing electronic processing circuitry (e.g., element 310 or other element). The desired signal is also differentially distributed around the reference line 307 that is connected to the local zero volts or ground line, thereby providing improved immunity to EMC interference. The conducting housing is also connected to the reference or ground pin, which provides improved immunity to ESD interference.